

## Amplitude analysis of the reflected waves at the Philippine Sea plate in the Tokai region

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### Introduction

The Philippine Sea plate is descending into the mantle beneath the Honshu with a velocity of several cm/year. Tokai region is one of the interesting regions to know the mechanism of large earthquakes because many large earthquakes have occurred along the Nankai-Suruga troughs. The configuration and characteristics at the upper boundary of the subducting slabs are very important information to know the mechanism of inter-plate earthquakes. A seismic experiment with explosions was done to know the configuration of the subducting Philippine Sea slab and crustal structure of the central Japan region.

### Data

We use seismic records of shot J5, which is the southernmost shot point, with the charge size of 500kg. The seismic record at the 391 seismic stations on the survey line from Shizuoka to Ishikawa prefectures.

### Results

At the record section of shot-J5, clear later arrivals are observed. The cause of the later arrivals are research by Iidaka et al. (2003). The depths of the reflectors are estimated to be 10-20km and 20-35km. The later-arrivals from the deep reflector are observed on the survey line with a distance of 150km. The deep later-arrivals can be explained by the reflected wave at the upper boundary of the subducting Philippine Sea plate. We research the characteristics of the upper boundary of the subducting Philippine Sea plate. The amplitude ratio between the first arrivals and reflected waves suggested several peaks on the graph of amplitude ratio vs. epicentral distance. The results indicate that characteristics at the upper boundary of the Philippine Sea plate are heterogeneous.